

## Preparation of 3-pentenitrile

## Abstract

5

A process is described for preparing 3-pentenitrile, characterized by the following process steps:

- 10 (a) reacting 1,3-butadiene with hydrogen cyanide over at least one catalyst to obtain a stream 1 which comprises 3-pentenitrile, 2-methyl-3-butenitrile, the at least one catalyst and 1,3-butadiene,
- 15 (b) distilling stream 1 in a column to obtain a high-1,3-butadiene stream 2 as the top product and a low-1,3-butadiene stream 3 as the bottom product which comprises 3-pentenitrile, the at least one catalyst and 2-methyl-3-butenitrile,
- 20 (c) distilling stream 3 in a column to obtain a stream 4 as the top product which comprises 1,3-butadiene, a stream 5 which comprises 3-pentenitrile and 2-methyl-3-butenitrile at a side draw of the column, and a stream 6 as the bottom product which comprises the at least one catalyst,
- (d) distilling stream 5 to obtain a stream 7 as the top product which comprises 2-methyl-3-butenitrile, and a stream 8 as the bottom product which comprises 3-pentenitrile.